

Minesched 2023

Enhancements

Setup Schedule

- **Use the Automatic Routes tab to define automatic haulage**

You can use the new **Automatic Routes** tab to define automatic haulage and select the source, destination, destination point, truck type, and if you want the route to be automatic. You can access the **Automatic Routes** tab from the **Setup Schedule > Material Flow > Haulage > Haulage routes** tab.

- **Display the material movement rules on the Automatic Routes tab**

You can use the new **Truck allocation to material movement path** data grid to display the material movement rules in which the source and destinations are defined. In this data grid, you can select the destination roads, trucks, and enable the use of the automatic routes. You can access the **Automatic Routes** tab from the **Setup Schedule > Material Flow > Haulage > Haulage routes** tab.

- **Create nodes at the haul line connection points**

On the **Setup Schedule > Haulage** tab, while importing haul lines or roads, nodes are created at the connection points where two or more roads are joining:

- Nodes are created only at end points, if two roads are intersecting and contains multiple points in common but the points are not end points, nodes are not created at the points.
- For all roads (like, haul or bench road), end-to-end connections are checked within the specified tolerance.
- For bench roads only, intermediate connections are checked with other haul roads because benches can join the haul road in between.

- **The Adjust the haulage search radius functionality is displayed in the Roads tab**

The **Adjust the haulage search radius** functionality that was earlier located on **Haulage routes** tab, is now shifted to the **Roads** data grid. The functionality related to getting the haulage results from manually defined haulage routes is the same. Now, this search radius is used to create nodes to check the connection tolerance between the connection points (end points of haul lines or roads).

- **Define automatic routes for material movement rules**

When you define a haulage route as automatic in the **Truck allocation to material movement path** data grid, the haulage route is **Automatic** for material movement rules with the same source and destination locations. You can access the **Truck allocation to material movement path** data grid on the: **Setup Schedule > Material Flow > Haulage > Haulage routes > Automatic Routes** tab.

- **MineSched searches for the best start point on available roads for automatic routes**

For automatic haulage routes, MineSched now searches the first starting point and roads according to the source block of the hauled materials for the best possible route. The first starting point of the road is searched according to the elevation of the source block of the hauled material. If the best elevation exists at multiple points, the best elevation within the shortest distance is selected. The search also considers any pit points if defined on any of the haul roads. Only one pit point can exist on each haul road.

- **Priority rules for shortest path for automatic haulage workflow**

MineSched now finds the shortest path from the source block position to the destination road or block using the haulage nodes which are created at connection points of haul lines. The search for the shortest path also considers the priorities of the haul lines. At each node, MineSched checks the connected haul lines and selects the haul lines with the highest priority. A node-to-node search continues from the first starting point that is calculated until the destination is reached. Out of all the resulting options, MineSched calculates the distances and uses the shortest path.

- **Updated name of Bench collections tab**

On the **Haulage** tab, the **Bench collection** tab is now renamed as the **Collections** tab that contains the following sub-tabs:

- Road Collections (to define Road Types and Road Rolling Resistance values)
- Bench Collections

- **Create Road types and enter Road rolling resistance values**

You can create multiple **Road types** and enter **Road rolling resistance** values for each road type, that can be applied for each year. You can assign **Road types** to each haul road or a bench road.

- **Apply date and seasonal changes**

You can apply date and seasonal changes in roadway grade and velocity calculations related to road types and road rolling resistance factor values on the new **Road Collections** tab. You can now define different resistance values for the schedule or seasonal changes for a year that is applied for the future as well. You can access the **Road Collections** tab using the **Setup Schedule > Material Flow > Haulage > Collections** tab.

- **Import production data from CSV and ODBC data sources**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. You can select the relevant production tab to map the database table fields to the corresponding **Production** tab fields.

- **Import data for the production resources features**

You can import data from **CSV** and **ODBC** files on the *Manage Data Sources* form for the production resources features. On the *Manage Data Sources* form, you can perform the following functions on the data sources:

- Insert
- Delete
- Edit Mapping
- Refresh

- **Import data for the ancillary resources features**

You can import data from **CSV** and **ODBC** files on the *Manage Data Sources* form for the features of the ancillary resources.

- **Create nodes at the connection point for automatic haulage workflow**

On the **Setup Schedule > Material Flow > Haulage** tab, you can now view nodes created at connection points of haul lines in the 3D Canvas. To verify that the connected haul lines to a node, hover over the node in the canvas, and details of the node appear. You can choose to display nodes from the **Display menu** functions in the 3D Canvas.

- **Starting point, global speed limit, and wildcard usage in Automatic haulage workflow**

The Automatic haulage workflow now supports the use of the global speed limit and wild card usage while defining material movement rules. Also, the functionality for selecting the best starting point has been improved.

- **Import ancillary data from CSV and ODBC files**

You can import data from different databases (including **CSV** and **ODBC** files) for ancillary activity-related tab fields. You can select the relevant ancillary tab to match database table fields to corresponding MineSched fields.

- **View the Calendar tab in Data integration**

When you use the **Data Sources** menu, you can import data from the **CSV** or **ODBC** files to view the **Calendar** tab on the *Edit Mapping* form.

- **Import data for the production capacities features**

You can import data from **CSV** and **ODBC** files on the *Manage Data Sources* form for the production capacities features.

- **Import production rates data from CSV and ODBC data sources**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. You can select the relevant production rates tab to map the database table fields to the corresponding **Production Rates** tab fields.

- **Use the road types and rolling resistance values to calculate truck velocities**

When you use rimpull tables to define the truck velocities, you can select road types and rolling resistance values to calculate the velocities of a truck on the haulage route. Truck velocities vary according to different road types and rolling resistance values. You can access the truck velocities on the tab: **Setup Schedule > Material Flow > Haulage > Haulage routes**.

- **Import ancillary capacities data from CSV and ODBC data sources**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. You can select the relevant ancillary capacities tab to map the database table fields to the corresponding Ancillary Capacities tab fields.

- **Import ancillary rates data from CSV and ODBC data sources**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. You can select the relevant ancillary rates tab to map the database table fields to the corresponding Ancillary Rates tab fields.

- **Select Continuous to make the equipment work continuously for Working calendars**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. On the *Edit Mapping* form, when you select **Continuous** in the **Calculation Type** column on the **Calendar** tab, you can map the database table fields to the corresponding **Calendar** tab fields for Working and Holiday calendars. You can define the dates in between which the equipment works continuously for Working calendars.

- **Select Durational to make the equipment work for a specific time period for Working calendars**

You can import data from different databases (**CSV** and **ODBC** files) on the *Manage Data Sources* form. On the *Edit Mapping* form, selecting **Durational** in the **Calculation Type** column for the **Calendar** tab maps the database table fields to the corresponding **Calendar** tab fields for Working and Holiday calendars. You can define the time period the equipment works, even for Working calendars.

- **Undo redo support for road types and rolling resistance values**

MineSched now supports undo and redo for road types and rolling resistance values in the data grid view.

- **Undo redo support for Automatic Routes tab**

MineSched now supports undo and redo on the Automatic Routes tab. The material movement rules are also updated according to the undo redo changes.

- **Override Rimpull/Retard workflow for Bench Collections**

You can select the new check box **Override rimpull/retard velocities** to assign default velocities to bench roads. The rimpull/retard velocities for bench roads that are used in defined routes or automatic routes are replaced with specified d-field velocities or bench collection velocities. You can access the check box on the **Collections** tab on the **Setup Schedule > Material Flow > Haulage** tab.

- **Automatic haulage route support for stockpile and process**

You can enter the x,y, and z coordinates in the new **Stockpile Position** and **Process Position** fields when you assign stockpile and plants as source locations for the automatic haulage route functionality.

- **Assign global speed limit for automatic haulage routes**

The **Assign Global Speed Limit** icon has been added to the **Automatic routes** tab. You can view any changes in the existing **Assign Global Speed Limit** functionality on the **Defined routes** tab, on the **Automatic routes** tab, and vice-versa.

Publish Results

- **The Publish Results tab supports the new automatic haulage workflow**

The **Publish Results** tab now supports the new automatic haulage workflow. All the haulage reports are generated as usual but can also include the data from automatic haulage routes. The Haulage route name is displayed as **Automatic** for automatic haulage routes.

Issues Fixed

Miscellaneous

- **The relative expression check issue for inactive ancillary activities is resolved**

When the ancillary activity is inactive and you enter an **Expression** for the **Relative** quantity and then run a schedule, MineSched now creates the schedule successfully.

- **A confirmation message related to scheduling is now translated**

MineSched now translates and displays the confirmation message related to recreating scheduling models in Russian and Chinese.

- **Eyeshot update**

MineSched now supports the latest Eyeshot 2022 version.

- **DevExpress upgraded to version 21.2.7**

MineSched now uses the DevExpress version 21.2.7.

Create Schedule

- **The location validation issue is now resolved**

The location validation occurs only when there are any changes in the location geometry and properties, or when you add new locations.

- **Data is retained for the Column option**

On the *Customise Report* form, when you select the **Column** option in the **Period order** list and then change the data in the report, the data is now retained.

Setup Development

- **Evaluate headings in scenarios with multiple models**

Now, you can correctly evaluate all headings in scenarios with multiple models.

General

- **Insert a row in the spreadsheet view**

When you now use the spreadsheet view, you can insert a row by right-clicking the row header and then clicking **Insert**. This functionality is available only for persistent spreadsheet views.